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ABSTRACT

This paper summarizes the history and current directions of the Science for Citizens program at the National Science Foundation and notes the role evaluation and evaluators might play with respect to it. The goal of the program is to help scientists and citizens participate knowledgeably in policy-making with respect to issues in which science and technology play an important part. To be responsive to this Congressional mandate, the program is handled as a citizen (including scientists) education program, demanding assurance of objectivity and balance, within specified, explicit political contexts in which citizens can make decisions and influence policy. The projects which the program supports, the program components themselves, and the assumptions about issue-orientation, audience, and process on which the program is based, all need evaluating. American Educational Research Association members are invited to become involved with the projects and the program in that role. (Author)

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Interactions of Citizens and Scientists: Experience in One Federal Program

by Rachelle Hollander, Program Manager, Science for Citizens

Prepared for 32.19 Teaching Science in a Social Context: Needed R&D from a Federal Perspective.

AERA Annual Meeting, March 31, 1978

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Paper to be presented at 32.19
AERA Annual Meeting, March 31, 1978

Rachelle Hollander, Author

DRAFT

32.19

Interactions of Citizens and Scientists:
Experience in One Federal Program

The purpose of my talk is not to tell you your business. I take it that business is research (and development) on teaching science in a social context of one sort or another. I'm not an expert in that business; in fact, I know relatively little about it. So, I'm not going to tell you how to evaluate.

I'm going to tell you about my business--a new federal program at the National Science Foundation called Science for Citizens. The projects we support are supposed to have evaluation components. They certainly need evaluating, as do the SFC program components themselves.

Briefly, the overall purpose of the SFC program is to help scientists and citizens participate knowledgeably in policy-making with respect to issues in which science and technology play an important part. We currently support three types of activities with this overall purpose. Residencies and internships enable scientists and engineers and science and engineering students to associate with a non-profit citizen organization for up to a year to undertake activities with that purpose. Forums, conferences, and workshops allow organizations to sponsor a project with that purpose. And, we have just initiated a planning studies component, intended to allow organizations to invest effort in exploring the possibility of establishing or expanding stable organizational structures and processes with that end. Individual projects in these SFC program components, and the components themselves, need to be evaluated.

I'll return to this need, which I assume to be your bailiwick, shortly. First, I want to tell you a little bit about the political history of the program. I think that you may then have a better grasp of where it came from and where it might go. I use "political" in its broadest sense here, and I'm going to go on to fill you in--briefly and necessarily sketchily--on the two components of my use of that word; the social history and the Congressional history.

Social History

The SFC program grows out of the intersection of many forces in contemporary American life, coalescing in the general demand for accountability and the search for procedures to get accountability. Two social groups provided the force behind the Congressional mandate for the program: citizen groups demanding a policy voice and groups of public interest scientists. Both recognized a need for or began to demand scientific and technical expertise and information at the service of the citizenry, in the way these resources have for years been at the service of business, industry, and the federal government (who could pay).

Congressional History

These two social groupings found a supporter in the relevant committee of the Senate, who in 1977 appeared ready to move to full-scale funding for projects in which scientists and engineers with policy expertise would be put at the service of citizens' groups to enable them to participate knowledgeably in the policy arenas affecting them. A powerful member of the relevant House Committee opposed the idea. Opposition in that

Committee is created by the perception of three problems. First, there is the fear that support would go to projects to protest and slow down particular federally-supported initiatives (nuclear energy facilities, for example). Second, there is the notion that the representative system precludes any need for or desirability of citizen participation in policy-making. Third, there is reluctance to start supporting a program which could become a "bottomless pit," as thousands of groups might have legitimate claims to SFC money.

The Senate and House have compromised to date on dollars for the program. We currently have $1.672 million (for FY 1978). Our 1978 authorization, which is for the Office of Science and Society as a whole, includes the House emphasis on citizen understanding (as distinct from participation) as well as the Senate emphasis on putting scientific and technical expertise at the service of citizen groups.

By now you may perceive that we have what might be called a potential "hot potato" in our hands. Since we do believe that the goal of the program is worthwhile and, in fact, necessary in today's political climate, we have been proceeding with caution, attempting to construct program elements responsive to the Congressional compromise. Thus, we are handling the program as a citizen (including our scientist-citizens, which I'll comment about further toward the end) education program, demanding assurance of objectivity and balance, within specified, explicit political contexts in which citizens can make decisions and influence policy. We must insist that the people involved in our projects, or the outcomes of the projects, feed into a political process. We recognize that both

these elements--education and politics (broadly defined)--are necessary if the program is to succeed in its overall objective and to remain on the political tightrope. You can see what we mean by this in considerably more detail by looking at our program's 1978 announcements and the summary descriptions of the residencies and internships, and forums, conferences, and workshops funded in 1977. Some of these activities have the relevant characteristics more than others, but it is always the recognition of the need to join these two elements that we're looking for.

On the basis of the experiences we have had over the past year and a half, we have come to some tentative conclusions about what is needed for projects to be successful in terms of our overall objective of increasing citizen participation in policy-making. These conclusions need evaluation too, although they are very near and dear to me. The first conclusion is that a project must have a careful and selective issue-focus. The focus must be on an issue of interest to an activist audience. This is the second necessity. What I mean to say here is similar to what I said earlier. The program is not interested in increasing the lay public's understanding of science over the long haul. It is interested in bringing together persons with the scientific and technical expertise and independence necessary to articulate the policy-options, with a lay audience composed of representatives from all groups, if possible, with an interest in which, if any, options will be chosen. This brings me to the final* necessity which I will bring up in this paper: the need

*Capacity for continuing activities of this sort being one necessity I won't discuss.

for an iterative and interactive process in which the teacher/learner distinction must vanish. Often the experts have a great deal to learn from the non-experts before they can articulate issues and options or devise programs in ways that make any sense. It is only in this iterative process that issues become clear and appropriate scientific and technical options can be brought to bear. It is this lesson which I believe to be the most important one citizen participation movements and, with them, the SFC program, have to offer. And, I am sure it would tax the ingenuity and competence of those doing research on teaching science in a social context to tell us what the scientists learn or have to learn in order to allow the purported learners to make knowledgeable choices which are of use to them.

Well, what might all this mean for you? It means, I believe, an unusual opportunity for persons interested in evaluating science education to formulate and effectuate evaluations of informal science education in a political context, if they are willing and able to get involved with those among their academic colleagues and community residents who are interested and involved in these sorts of issues. SFC projects make many different assumptions about what citizens need, what scientists and engineers have to give, what methods work to give it, and what constitute successful outcomes, all in need of testing. Project evaluations would also help to form the basis for evaluating SFC program components themselves. And, for this latter step, we may call on your help in the future.

Coda

I should also mention a tangential area for research in which the Ethics and Values in Science and Technology program in the Office is interested, since some of you may wish to pursue it--the normative analysis of the processes by which policy decisions are reached on issues involving and affecting the work of scientists and engineers. The pervading call for accountability is one response which points to dissatisfaction with how things have been and are currently being done in these arenas, and we encourage you, if you are interested, to let us know you are.